Success Story

Henrico County, Virginia: Building on a History of Resiliency

A Great Place to Live, Work, and Play

One of the oldest counties in the United States, Henrico County, Virginia, is part of the original Virginia Colony. For more than 400 years, Henrico County has endured, proving itself resilient through the centuries. Most recently, the county mounted a strategic and well-executed plan to energize the community and its economy. Henrico County emerged as one of America’s best places to live according to industry surveys. The county even attracts world-class events, such as the UCI Road World Championships, which brought over 640,000 cycling enthusiasts to the area over a 10-day period in September 2015. The county also hosts two NASCAR Sprint Cup races, each drawing close to 120,000 people.

The Challenge

Preparing for unprecedented services demand

These events were expected to place an unprecedented load on county IT systems, which were already under pressure from 8.5% compounded population growth over the past five years—among the highest in the country. The time had come for an infrastructure refresh.

“Henrico County is growing rapidly because it’s a great place to live,” says Brian Viscuso, IT project lead for system administration at the county. “For the quality of county services to keep pace with the quality of life, we needed greater agility from our IT systems.”

The county’s public safety departments already respond to more than 190,000 calls annually. With thousands of cyclists and spectators on the roads, the county needed to make sure that its systems, including 911 and dispatch, could remain responsive during the UCI championships. The county also needed the ability to scale nondisruptively to support growing demand for 185 different applications such as Computer Aided Dispatch (CAD), geographic information systems (GIS), Real Estate Assessments, CityWorks asset management, utility mapping, and billing systems. Key to achieving the county’s IT and service-delivery goals was completing the migration to the new infrastructure with minimal downtime.

“We needed a flexible, modern storage platform that could scale to handle double our usual peak load and accommodate up
to four times the 911 calls,” says Viscuso. “We also wanted a knowledgeable partner to support us through the migration.”

**The Solution**
**Bringing the complete package**

Viscuso and his team engaged ePlus, a NetApp partner, for assistance in upgrading to NetApp clustered Data ONTAP. “ePlus offered us the total package,” says Viscuso. “They handled all aspects of the upgrade, from project management and documentation to staff training and knowledge transfer. ePlus acted as a strategic partner for us the entire way. Our migration to clustered Data ONTAP went smoothly.”

Henrico County deployed NetApp FAS8040 and FAS2552 storage systems running clustered Data ONTAP and migrated all data with very little business impact. NetApp SnapMirror® software replicates data to a disaster recovery site while NetApp SnapVault® technology enables disk-to-disk backups. This capability enables the county to virtually eliminate tape from its primary data protection processes to save time, improve reliability, and accelerate backup and recovery.

“Clustered Data ONTAP builds on that software-defined approach by enabling us to move volumes without users even noticing, because there’s no scheduled downtime and no service interruption.”

NetApp Flash Cache controller-attached caching significantly improves application performance. “With Flash Cache regularly handling 80 to 90% of reads during heavy loads, volumes that once had latency spikes to 100ms and averaged approximately 10ms are now consistently under 10ms, with averages around 2ms,” says Viscuso. Before the UCI Road World Championships, the county worked with ePlus and NetApp to stress-test the systems to make sure that applications and services could scale as needed. The county used NetApp OnCommand® tools to monitor storage performance.

**Business Benefits**
**Better service quality, easier administration**

The county now has the capacity and agility to match its growth rate. Citizens benefit from a level of service previously impossible for public safety, GIS, asset management, and utilities workloads. Database contention has eased at the county’s 911 call center, taking public service and safety to the next level.

“With NetApp, we can provide superior performance and higher availability for our most critical applications and databases,” says Viscuso. “We can scale and tier our storage without downtime. It’s beautiful. Upgrading to clustered Data ONTAP was the best decision we could have made.”

**Enabling new technology projects**

As new technology initiatives come on the horizon, the county will be ready to support them. For instance, robots will run through miles of sewer pipes, collecting and storing data that will aid in infrastructure maintenance. A new, award-winning Technology Enhanced Modern Policing Operations (TEMPO) initiative will increase data warehousing demands. Digital video from police body cameras must be archived for legal purposes. At the same time, a new land records system is generating terabytes of data.

“We are seeing the benefits of our new NetApp systems every day, because the demands on our storage are always increasing,” says Viscuso. “Average time to deployment has gone from two business days to two hours for large workloads.”

Hosting a world-class event

With the eyes of the world on Henrico County at the UCI Road World Championships, the NetApp systems did not disappoint. The region warmly welcomed its 640,000 new temporary residents as database transactions soared, increasing by 1000%. City services remained available and responsive, taking more calls than at any time since Hurricane Isabel in 2003.

“Thanks to NetApp and ePlus, we successfully cohosted the UCI Road World Championships without impacting normal service levels to citizens and the county,” says Viscuso. “The bike race was a strong test of what our systems are capable of, proving that we’re well positioned to be a services provider for all Henrico County agencies even as our population grows.”